The Optical Magic Lantern Journal and Photographic Enlarger
Edited by J. Hay Taylor
A Magazine of Popular Science for the Lecture-room and the Domestic Circle.
Entered at Stationers Hall
1889

WITH WHICH IS INCORPORATED THE "LANTERN WORLD."

Vol. 10.—No. 117. FEBRUARY, 1899. *Price* 2d., *Post-free* 3d.

CONTENTS.

	PAGE
Notes	17
L.C.C. New Rule Respecting Cinematograph Exhibitions	19
Self-adjusting Apparatus for the Phantasmagoria Lantern	19
The Perth School Board and the Lantern	20
Optical and Mechanical Effects for the Lantern.—No. VI.	21
Common Objects for the Lantern	23
A Shadowgram Lantern Slide	24
A Novel Lantern Reading	25
Miniature Acetylene Generator or Lamp on Trial	25
A Few Lantern Notes from West Australia	27
Acetylene Gas and its Generation	28
New Apparatus	29
Correspondence	30
Patent Intelligence	31
Editorial Table	32
Notes and Queries	32

NOTICES.

The *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of every month, price Two Pence, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

12 months, 3/-. United States, 75 cents.

Exchange Column, General Wants, &c. (not Trade)—First 20 words, 6d.; and for every 3 additional words, 1d.

Small Advertisements must reach the office not later than the first post on the 24th of each month. All cheques and postal orders to be made payable to the Magic Lantern Journal Company, Limited.

Editorial communications must be addressed, **J. HAY TAYLOR.** Advertisements and business communications to **THE MAGIC LANTERN JOURNAL COMPANY, Limited, 9, Carthusian Street, London, E.C.**

American Agents:—The International News Co., 83 and 85, Duane Street, New York City.

NOTES.

Alexandra Palace.—It has been arranged by the management of the Alexandra Palace, London, to hold a great exhibition of commerce, manufactures, inventions, and art, commencing on April 1st and continuing until the end of October. There will be 25 sections open to competition for awards. Section 12 includes scientific apparatus, microscopes, astronomical and topographical instruments, surgical apparatus; cinematograph films and apparatus, magic lanterns, stereoscopes, etc.

◆ ◆ ◆

Hereford Photographic Society.—At the last month's business meeting of the above society it was decided to hold a photographic and lantern exhibition towards the end of March.

◆ ◆ ◆

Dunlop Company's Lantern Slides.—We learn that the Dunlop Tyre Company are prepared to lend to approved clubs, boxes of 50 lantern slides illustrative of interesting cycling subjects. Communications may be sent to 164, Clerkenwell-road, London.

Calcium Carbide, Water and Sugar.—Professor Lewis has pointed out that with water only, acting on calcium carbide, the generation of acetylene gas is somewhat irregular, but with water saturated with sugar the evolution of gas is regular. This is a very simple remedy for a trouble that has been a great bugbear with many users of small so-called automatic generators.

◆ ◆ ◆

McKellen, Limited.—This company has been registered with a capital of £6,000 in £1 shares, to take over the business of McKellen and Company, of Manchester, photo apparatus makers and dealers.

◆ ◆ ◆

To Transfer Prints from Newspapers.—Illustrations from papers can be transferred to unglazed paper as follows:—Make a solution of soft soap, half-ounce, pearl ash 2 drachms, distilled water 16 ounces, and moisten the print, which must previously have been laid face upwards on—say a smooth board, with this solution. Upon this place the paper on which the reproduction is desired and rub well with a piece of rounded metal or other hard material, the bowl of an ordinary spoon will be very suitable. By occasionally lifting one corner of the paper it will be seen when the desired intensification has been arrived at; if too light it must be again well rubbed.

◆ ◆ ◆

A Novelty in Films.—The well-known humorous song "Simon the Cellarer" has been illustrated with cinematographic views by Mr. Philipp Wolff, of Southampton Street, W.C. Each of the three verses is illustrated by a separate film of about 50 feet in length. The action is full of animation, and when coupled with the singing of the song forms a spectacle which is of great interest, especially as the films themselves are very clear and capable of showing the fine detail of the half-tones.

◆ ◆ ◆

Photographic Convention.—The Photographic Convention will meet at Gloucester from July 10th to 15th.

◆ ◆ ◆

Eastman Photographic Company, Ltd.—The dividend warrants were posted by the Eastman Photographic Materials Company, Limited, on the 18th ult. for 10 per cent. on both the Ordinary and Preference shares, making with the interim dividend already paid, a total dividend at the rate of 20 per cent. per annum for the year ending 31st December, 1898. This business is now carried on under the title of Kodak, Limited.

New York Calcium Carbide Rules.—Calcium carbide either in store or transit through New York City must be in hermetically sealed iron receptacles and labelled "Calcium carbide—dangerous if not kept dry," and no single package must contain more than 100 lbs. Not more than 20 lbs. put up in 2 lb. metal packages can be kept in any mercantile building, and then permission must first be obtained from the Fire Department. These packages must be kept in a fire-proof safe, which is elevated 6 inches above the street grade. Provision is also made for the storage of larger quantities in isolated fire-proof buildings, but the quantity so stored must not exceed five packages each of 100 lbs.

◆ ◆ ◆

"American Journal of Photography."—At the commencement of this year several alterations were made in connection with our esteemed contemporary the *American Journal of Photography*. As hitherto, the editorial chair will be occupied by Mr. John Bartlett. The publishing department, however, has been taken over by Mr. Austin C. Leeds, of 817, Filbert Street, Philadelphia, U.S.A., to which address all communications should be sent.

◆ ◆ ◆

Cinematograph Fire.—We received the following item of news from an American correspondent too late for last issue. Towards the latter part of December, just as a cinematograph picture of the S.S. "Maine" was projected on the screen at Wayne, Mich., U.S.A., the machine went up in flames and destroyed a thousand dollars worth of property. A few hours later Mr. Kline, son of the proprietor of the Kline Cinematograph Company, shot himself.

◆ ◆ ◆

The Darlington Medal.—Some time ago the editor of "Darlington's Guide Books" offered a prize (gold medal) for the best photograph taken by travellers during 1898. This has been awarded to Mr. J. Kearney, Liverpool. A second prize has been awarded to Mr. R. Brookes, Norbiton, London.

◆ ◆ ◆

Hand Grenades for Lanternists.—We observe that the *St. Louis and Canadian Photographer* has reprinted the article on the above subject (without in any way acknowledging the source), which appeared in our columns for November. The want of acknowledgment must have been an error, for the journal in question is of high standing.

Transfer of a Business.—The business of Messrs. Wood Brothers, of Liverpool, has been taken over by Messrs. Archer & Son, of the same town, who will continue the business at the same address and in the same names.

◆ ◆ ◆

The Cinematograph for Commercial Travellers.—A Toronto firm, manufacturing horse rakes, self-binders, and other agricultural appliances, has had cinematographic sets made showing its apparatus at work. Sets of these films are to be sent to this country, and it is anticipated that large orders for goods will follow.

London County Council.

NEW RULE RESPECTING CINEMATOGRAPH EXHIBITIONS.

IN our December number we published the new County Council regulations respecting conditions laid down with regard to cinematographic exhibitions on premises licensed by them. A few days ago a slight alteration was made to these regulations, an addition being made to Rule 3, which now reads as follows:—

Rule 3.—The cinematograph shall stand in a suitable fire-proof room which shall be entirely enclosed, the floor also being fire-proof. The door shall open outwards and be self-closing. One of the firemen of the establishment shall be in attendance near the apparatus with a wet blanket and two buckets of water. No inflammable material shall be within 2 yards' distance from the enclosure. The audience and seats shall at no point be less than 8 feet distant from the lantern; the audience being prevented from approaching by a suitable rail or barrier.

Or, as an alternative, that the cinematograph shall stand in a closed sheet-iron box, measuring not less than 6 feet by 4 feet by 6 feet in height, fitting closely to the floor, which shall be covered by two thicknesses of ordinary asbestos sheeting; that of the three windows which are necessary in the front face of the enclosure, the centre one shall not exceed 8 inches square, and the windows on each side shall not exceed 6 inches square; that a flap screen, to cover all these three holes, shall be fitted and actuated both from the inside and from the outside of the enclosure; that the space separating the audience and seats from the iron enclosure shall not be less than 2 feet in width at the sides and in the front of the enclosure, and the space at the back in which the door is situated shall not be less than 6 feet from the enclosure. The audience shall be completely excluded from the above space around the enclosure by a suitable barrier. No unnecessary combustible material shall be within the enclosure, and as far as possible, all necessary combustible material shall be rendered fire-proof, or shall be enclosed in fire-proof receptacles. The part of the film immediately opposite the lens shall be provided with an apparatus which prevents the film, if kindled, from burning towards either of the spools.

Self-adjusting Apparatus for the Phantasmagoria Lantern.

AS USED IN 1854.

THE adjustment necessary to keep the phantasmagorial images distinct during their enlargement and contraction must be continuous as long as the lantern moves, and yet constantly variable, and at every point differently proportioned to its motion, so that no manual dexterity could make even a rough approximation to it. It was proposed by Dr. Young to form a combination of jointed levers, connecting the screen with the draw-tube, which could be made to produce the true variation of its required motion.

Sir David Brewster put forward another plan that it might be efficaciously produced by a simple piece of mechanism connected with the wheels, which, however, he does not describe. The easiest and simplest method appears to be independent of the wheels, and is represented in Fig. I. A template or curved ruler, as long as the course the lantern travels, has its lower edge made straight and its upper edge one branch of a rectangular hyperbola, whose semi-axis is 1.4142 times the solar focus of the lens (or the diagonal of a square whose side is equal to that focal length). The foremost end of this curve, or that next the screw, is to be the vortex of the hyperbola. Its curvature will diminish from this point without ever becoming straight, and it will rise the whole way to the other end without ever reaching a horizontal line above it. This curved edge, being fixed in the centre of the railway on which the carriage of the lantern runs, lets a small roller, running upon it, support the front end of a lever whose fulcrum is a light horizontal axle carried by the side pieces of the carriage, prolonged forward for that purpose, and vertically under the inner end of the draw-tube when in the middle of its range. The lever is a bent one, consisting of a horizontal and vertical arm, kept at right angles to each other by a diagonal bar, the vertical one ending in a fork embracing the fixed tube of the lantern, its upper ends being slit to receive two cylindrical pins projecting from the inner margin of the draw-tube. These are supposed to be equidistant from the centre of the lever's motion, as the small roller in front of it, so that the rise and fall of the latter may produce an equal motion in the draw-tube. If it is found more convenient to make the latter motion exceed the former, the semi-axis of the hyperbola must be diminished from that found above in the ratio that one arm of the lever bears to the other.

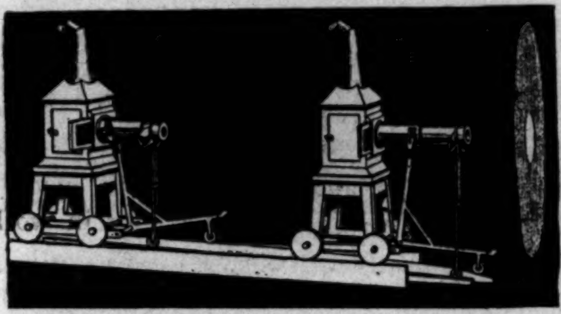


Fig. I.

In order to adjust this in its true place, we have only to see first, that when the roller rests on the foremost end of the curve the draw-tube is protruded to that distance that makes the image exactly equal to the slide; secondly, to support the lower straight side of the ruler at this exact height and on a truly level plane; and thirdly, to move it to or from the screen until the roller, being still at its extremity, the screen receives the above-mentioned unmagnified image distinctly. The effect of approach and recession in images that really only enlarge and contract on a fixed screen will not be aided by this preservation of equal distinctness, but will depend wholly on the preserving equal brightness, or at least no diminution of brightness as the image enlarges, nor any increase thereof as it contracts.

In order to effect this the total quantity of light, which, without special contrivances would be constantly equal, must be made at least in proportion to the area of the image: *i.e.*, to the square of its breadth, or of its distance from the lantern. This also is quite beyond any mere manipulation to produce. It may be easily done, however, by closing the aperture of the lens with two plates of metal or card sliding opposite ways horizontally, cut in the form shown in Fig. II., so as to leave constantly a square opening (set diagonally), which will be dilated concentrically as the pupil of the eye by drawing them apart and obviously increase its area as the square of the space they each move through. If, therefore, they are both moved by a single rod, which is easily managed by two bent levers as shown in Fig. II., and they both hang down and rest by a roller on a straight inclined plane fixed beside the hyperbolic one above described, the whole rise of the said plane may be adjusted so as to make the breadth of the pupil constantly proportional to its distance from the screen and consequently its area proportional to that of the image. These seem to be the easiest means of producing these effects which characterise the phantasmagoria lantern, which appears, however, not to have been exhibited of late years, although its name has been usurped by inferior exhibitions.

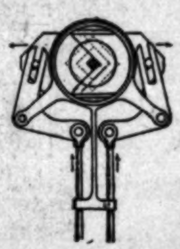


Fig. II.

The Perth School Board and the Lantern.

AT the monthly meeting of the Perth School Board held on the 4th ult., an amusing discussion took place relative to the introduction of the lantern in schools for teaching purposes.

"A proposal of the Works Committee that one of the class rooms of the Southern District School be fitted up for displays of the magic lantern came up for approval.

"Mr. Masterson moved disapproval of the proposal. He pointed to the present big schemes undertaken or about to be undertaken by the Board as affording an argument against expenditure on a mere magic lantern. It would cost not less than £100, and, as it might very well be at least delayed, he moved accordingly.

"Mr. Bridges seconded that gentleman's motion. He could not see where the magic lantern came in at all.

"Mr. Ramsay moved approval of the proposal. It was now almost impossible to teach geography to large classes without representations on screens. As to the cost, he could disillusion Mr. Masterson, for the sum total would not be over £25.

"Ex-Bailie Love was in favour of the rejection of the proposal. After all, £25 was an expenditure that might be regarded by the ratepayers as altogether unnecessary. It was to him a bit of a fad. Mr. Ramsay was amusing in the extreme when he said that geography could not be taught without a magic lantern. How had their forefathers, and how had the present generation, learned geography without magic lanterns? There must be a period put to this vexing expenditure in connection with this Board, for if they did not take care of the £20 they could not look after the hundreds. He was looking ahead to an increase in the rates. It was folly in the extreme to encourage a teacher in nostrums of this kind.

"The Chairman seconded Mr. Ramsay, remarking that the Edinburgh School Board, who were possibly almost as enlightened as Perth Board, had gone in for these lanterns.

"Mr. Masterson, in reply to the discussion, said the Board was already up to the neck—yes, up to the armpits, as he might say—in debt, and on that account it was not competent to incur this expenditure.

"On a vote, the Chairman and Messrs. Ewing, R. H. Miller, and Ramsay were for the magic lantern, and Messrs. Masterson, Bridges, and Love against it, the lantern being therefore carried."

Optical and Mechanical Effects for the Lantern.—No. VI.

By EDMUND H. WILKIE.

(Late Royal Polytechnic Institution).

We have explained two methods by means of which the waves of the ocean may be made to move in a fairly natural manner, and now purpose setting a vessel afloat and causing it to sink beneath the waters. Different builds and classes of ships appear to descend into the depths in different ways; for instance, the old wooden ships gradually settled in a leisurely manner and took their time in disappearing, but the modern iron built ocean greyhounds are of a more impatient and irritable disposition and sometimes sink with terrible suddenness, carrying their human freights with them almost before they have time to realise their danger.

Our ship will be of the ancient form as we wish to observe its motions, and it will sink with dignity and not take a hurried plunge head foremost.

We see the mechanism in Fig. XX., and it is not complicated. It simply consists of a frame of the usual size, having two mahogany guides extending from side to side, between which slides a small lever frame mounted in a wooden block; the larger lever being for the purpose of moving the whole block up and down.

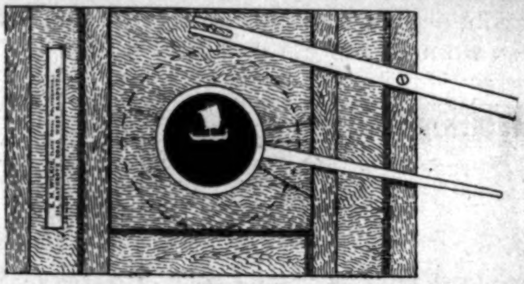


Fig. XX.

On the glass of this small lever frame is painted the ship in a black background, and the centre of the hull being in the centre of the glass the ship has the appearance of tossing on the waves when the small lever is alternately raised and depressed.

A very good effect can be obtained by placing two small levers together, flat against one another, and drawing the fore half of the ship on one lever and the aft half on the other, when by carefully matching them, the two will form a complete vessel, but when the catastrophe takes place the two small levers should be moved in different directions, one upwards and the other downwards, when the ship appears to break in the middle and can then be immediately sunk by actuating the large lever. This is a very perfect effect and apparently little known.

Now let us consider the second portion of this effect slide, which consists of a plate of glass let into the back of the frame and which is marked in our sketch by the dotted circle. The glass is a fixture and the lower half is rendered opaque by black varnish, the opaque portion extending upwards from the bottom until it just overlaps the bottom of the hull.

When the ship is caused to sink, it passes behind this opaque portion and thus disappears from sight. This method is not only useful for sinking a ship in an ordinary sea, but by putting on the screen suitable backgrounds, the ship may be caused to sink into the vortex of the maelstrom, forming an impressive and unusual effect, which, if exhibited to the accompaniment of appropriate music and noises, cannot fail to please the spectators.

Effects treating of the sea, ships, lighthouses, naval battles, explosions of submarine mines, etc., are not only capable of ingenious and artistic treatment in a very high degree, but are almost invariably regarded with favour by every class, and seldom fail to secure hearty applause. Some very ingenious movements have been invented and arranged from time to time by French artists and mechanicians, and one of these we now represent at Fig. XXI.

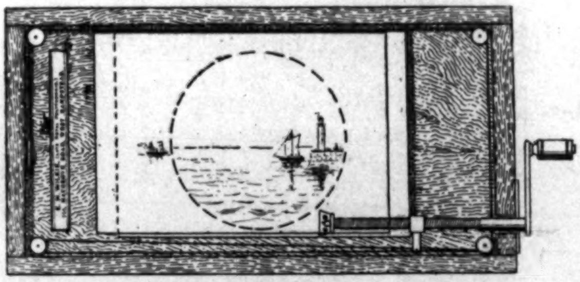


Fig. XXI.

It is not by any means new, the writer having had one in possession over 20 years ago, but it does not appear to be very generally known, so a description of its working may prove of interest. As we see in our diagram, it represents the entrance to a seaport, with a fishing smack leaving, while a small steamer is about to enter the magic circle from the other side. These vessels are travelling in different directions, and are moved by means of the winch handle to be seen on the right of our sketch. The handle rotates a long screw which passes through a movable block to which both ends of a long piece of catgut or twisted silk are fastened. It is an endless band which, commencing at the block, passes round the little pulley wheel in the right hand bottom corner, then upwards across the top, and passing round the wheel in the centre of the left side of the slide, returns to the left hand bottom corner by the same way that it came. From that corner it goes straight to the block, where it is fastened off. Thus it will be seen that at the top of the slide we really have two cords travelling in different directions, and it is by means of these lines that the different vessels are moved.

The ships are painted on two plates of talc or mica, which are fastened on to the cords by means of a tape binder which passes over the cord, and bending over on each side, is cemented down.

The talc plates being extremely thin, the whole of the movements may be kept very close together, thus enabling the exhibitor to focus the complete picture sharply, a point which is too frequently lost sight of in the designing of movements for wave and ship motions. The long screw is sometimes made to terminate in a rack wheel, so that the water is moved by an eccentric motion which adds to the beauty of the effect, but unfortunately also to the difficulty in obtaining a good focus on the screen.

This difficulty is the "bogey" of the designer of effects, as it is frequently necessary to secure each moving glass in a metal frame, and in spite of all the care that can be exercised, and all the "dodges" that ingenuity can devise, it is impossible in some cases to get the different moving glasses sufficiently close together to obtain a perfect focus on the screen. Of late years, owing to the great improvements which have been made in object lenses, this difficulty has increased to such an extent that some of the older mechanical movements are to be avoided by those exhibitors who aim at perfection.

The old non-achromatic objectives allowed much more latitude in focusing, and while one would scarcely care to recommend them in the present day, when an almost microscopic definition is demanded, yet they possessed advantages particularly their own, especially with regard to the exhibition of mechanical effects.

At Fig. X. in the present series, the writer illustrates one of the most perfect mechanical slides for exhibiting moving water and ships by one movement, but owing to the skill necessary in making the movements this slide is a costly one. Where expense is a consideration, a very good effect, worked upon similar lines but of a simpler character, can be obtained by using a frame made as in Fig. XXII.

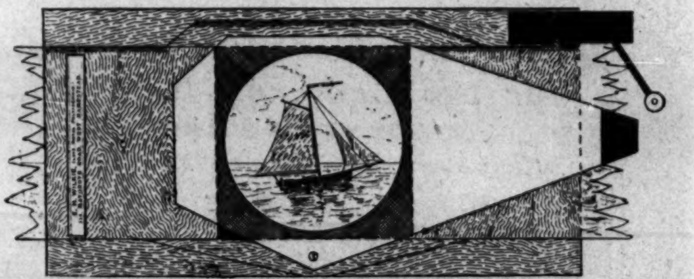


Fig. XXII.

This is a long mahogany frame having a gallery on one side into which a panorama is fitted carrying the sky and sea; in fact, the whole of what we may term the background of the picture. It is moved as usual by the little winch handle seen on the right hand side, and on the reverse side of the frame is a recess into which fits loosely the glass carrying the ship as shown in our drawing. This glass is rivetted to the frame at the bottom in the position shown, and the tossing of the vessel is obtained by moving the end of the glass on the right, which is cut of sufficient length to project beyond the end of the frame and form the handle. If one end of this panorama is painted to represent a bright clear day with a calm sea and the weather graduated as we pass along until we arrive at a storm at the opposite end, some very good results may be obtained, especially if the operator regulates the motion of the ship to suit the size of the waves over which the vessel is passing. This is a simple effect, but in our next we shall hope to deal with something of a much more elaborate character and show how the waves may be made to turn over and break on the shore.

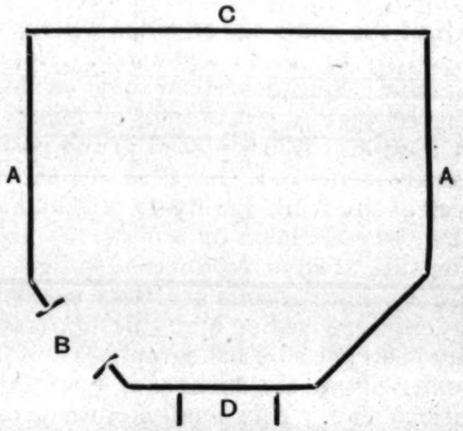
Common Objects for the Lantern.

By EDGAR CLIFTON.

As a pleasant relief from the slides, photographic or painted, which are usually shown, a few natural objects mounted in the orthodox way will be welcome. Of course the high-class commercial preparations will make the best show, but there are many common objects which call for no special skill in preparing or mounting. A few sprays of the smaller varieties of seaweed, carefully pressed and mounted between 3¼ inch square glasses make an effective slide; skeleton leaves, wings of flies, fish scales, etc., may also be arranged as in an ordinary microscopic slide, but necessarily on a larger scale. Live insects may be shown in a glass trough composed of two cover glasses separated ⅛ to ¼ inch by strips of wood.

It is now but a step to the lantern microscope, and this may either be elaborate or simple; the writer has extemporised an excellent one of low power out of a few pieces of cigar box and a small "gem" portrait lens, the ordinary lantern lens and draw tubes being temporarily dispensed with. With this a much more extended range of subjects may be dealt with; nearly all "low power" microscopic objects are available, sections of wood, stone, etc., being very suitable. Entire insects, crystals, etc., will make a good show. The process of crystallisation can easily be shown on the screen and never fails to excite interest. Make a warm saturated solution of any coloured salt—bichromate of potash answers well—and smear a few drops on a clean glass slide, taking care not to have enough on to run when the glass is placed in a vertical position; on being placed in the lantern stage the warmth will quickly evaporate the water and the crystals will appear. Small specimens of lace and other open fabrics also form amusing and, in some cases, instructive objects.

We must, however, resort to the opaque lantern, aphengescope or wonder camera as it has been variously termed, if we wish to show the greatest variety of objects. Many of the articles already mentioned will show only as silhouettes, but there are many things which are interesting from their colour or for the exquisite beauty of their construction, and this can only be rendered by reflected light. The aphengescope is in reality a very simple instrument and can be constructed by anyone with the slightest mechanical ability; the accompanying plan gives the idea in a few strokes. The lantern objective is removed from its usual position and screwed into the box A as shown, while the lantern front is pushed close up to the opening B, so that any object placed upon the interior of the door C will be brilliantly illuminated. Focusing is effected with the usual rack and pinion movement. There is, of course, a great loss of light in operating in this way, but this can be compensated for by showing a smaller picture; with a good oil light a 3 feet disc will be fairly illuminated, and with incandescent gas or acetylene the effect will, of course, be vastly superior.



AA wooden or tin box, B opening to receive draw tube of lantern, C position of door to hold objects, D front lens of lantern. The distance from D to C is governed by the focal length of the lens.

The subjects which can be shown successfully can hardly be enumerated, but amongst them may be mentioned the interior of a watch, showing the balance wheel in rapid motion, also the face of the same, if fitted with a seconds hand, which appears to travel much more rapidly when seen on a large scale. The beautiful colour photographs of Professor Lippmann were shown in this way at his lecture at the Society of Arts, and a watch was shown to demonstrate the principle on which they were projected. It is sad to relate that the grave (and in some cases reverend) seigneurs there assembled seemed to take as much interest in the watch as in the photographs; but then you see, they had all seen a watch before, and familiar objects, like familiar tunes, awaken sympathetic feelings in the human organism (this, however, does not mean that the same set of slides will for ever be welcomed by the same audience). Next to the watch, the often described but seldom seen experiment with a cut orange or lemon cannot fail to amuse. When placed in the position C, and gently squeezed, the effect of the moving particles of the fruit, the flying pips and ascending juice, when shown on a fruit the size of a washing tub, always produces a smile.

Ordinary photographs are thus easily shown on an enlarged scale, and this apparatus has actually been used by lithographers and portrait painters to obtain the outlines of a portrait in an expeditious way. Any small picture or coloured scrap can of course be shown in like manner. Crystals, natural or artificial flowers and leaves, coins, medals, small plaster casts, etc., are all interesting in their way. If a pair of lanterns are available, openings are made on both sides of the box, and double the light can consequently be thrown upon the object.

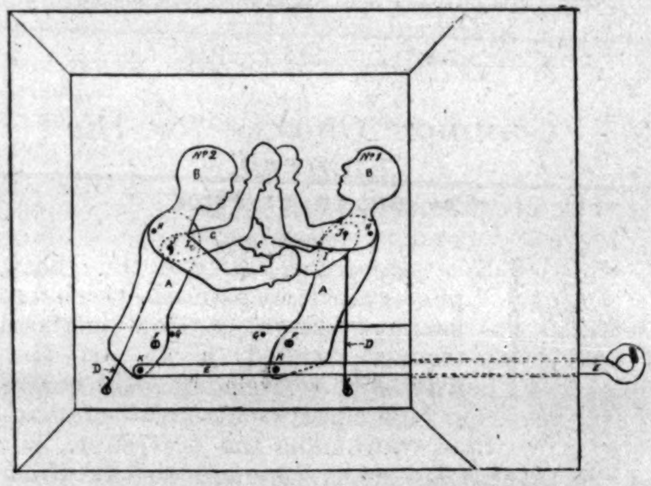
A Shadowgram Lantern Slide.
No. II.

THE CHAMPION BOXERS.

By THEODORE BROWN.

OF all the comic slides I have exhibited to a juvenile audience, I have never found one which produced such intense excitement and screams of delight as "The Champion Boxers," and its value to the lanternist is not likely to be over-estimated, whilst its construction is such that any amateur with a slight knowledge of mechanics may, in a very short time, make one for his own use. For the benefit, therefore, of those who think it worth their while to do so, I will endeavour to give such detailed instructions as will enable a satisfactory model to be made.

The main framework may be made of mahogany, and is of the usual size, viz., 4½ by 6½ or 7 inches, with an opening the same size as an ordinary slide, viz., 3¼ by 3¼ inches. Referring to the above diagram, it will be seen that at the base there is a board to which the two boxing figures, 1 and 2, are pivoted; this should be about ⅛ inch in thickness, also of mahogany, and fitted in grooves made in the outside framework. Each of these figures, 1 and 2, consists of three parts, A B and C; A forming the body, B the head and one arm, and C the other arm. These parts should be made of tin, and connected together in the following manner. A small screw or pin, F, on which the body works, connects this part of the body to the baseboard. A rod, E, is then pivoted to the bottom of the body at K, so that when this rod is pushed backward and forward through the slot in the framework, indicated by dotted lines, both figures, 1 and 2, move at the same time in opposite directions, or whilst No. 1 leans forward No. 2 leans backward, and *vice versâ*.



The arm C is now pivoted to the body at I, and the head and arm, B, pivoted to the body at H, and these two parts are then connected together at J, and actuated by a wire rod, D, which automatically governs the movement of the arms and head as the rod E is pushed in and out. A stop-pin is now fixed to the base at G, when the model is complete. The life-like manner in which these figures spring about, throwing their heads backward and forward and raising their arms to avoid blows, cannot fail to stir up interest on the part of the audience, and the lanternist who will take the trouble to make a model for his own use will never regret having spent the time in its construction.

A Novel Lantern Reading.

By HENRY COLLINS.

DURING the New Year's festivities I received an invitation from a lanternist friend to attend a party at his house, and as may be supposed, we had a short lantern entertainment, followed by—well, that has nothing to do with this. The entertainment with the lantern appeared to me to be so novel that I obtained particulars from mine host for publication for the benefit of brother lanternists. The reading itself is nearly half a century old, but I do not think it has before been illustrated with lantern slides.

I have said that the lantern entertainment was short, but to prepare the various slides for same must have been no small undertaking, they being for the most part photographs of various flowers, etc. The reading, which was given very slowly, took the form of a love letter, floral names being used at frequent intervals. It was a great success, and a series of stoppages had to be made, as applause quite drowned the voice of our lecturer. In quoting the words of the letter or lecture, I have printed in large letters each word where a slide was projected on the screen, so that should any reader at any future time wish to make a similar set, the work will be minimised :—

“ Sunflower Terrace, London.

“ My dear Rose-Mary,

“ As you are the Pink of perfection, and the blossom of May, I wish to tell Yew that my Heartsease has been torn up by the Roots, and the Peas of my Holm entirely destroyed since I began to Pine after you. You will perceive that I am a gardener. My name is William Budd. At first I was poor, but by shooting in the Spring and driving a Carnation fast I obtained a Celery, and by a little Cabbage-ing, etc., I Rose to be a master (although some might say something like a Creeper) of the garden.

“ I have now the full command of the Stocks and the Mint; I can raise anything from a Pennyroyal to a Plum, and what my expenditure Leaves I put in a box for you. If I may as a Cockscomb speak of myself, I should say that I am in the Flower of manhood—that I am neither a Standard nor a Dwarf. My nose is of a Turnip-Reddish kind, and my locks hang in clusters about my Ears.

“ I am often in the company of Rakes, and rather fond of Bine and Shrub, which my Elders reprove me for. So I had better Berry all this, and say that I have at Windsor Bean and have some London Pride. So Lettuce act for ourselves, and fix an early day for Grafting your fate with mine, which might be made a Poplar measure, but I think perhaps it had better be a Privet affair, for John Quill, the lawyer, says that your father, who never did a Lilac when he wanted to part us, means in this matter to take the Elm in his own hands ; but if he does and Bullace me at all I will not be Sloe in settling his Ash, and I will be such a Thorn in his side, that the day he does it shall be one of the worst Daisy he ever saw.

But I must sow no Seeds of discord, for I am certain that we shall make a very nice Pear, and never repent even when we become Sage by Thyme. You will be the Balm of my life and I shall be the Balsam of yours, so that people that might call us green now would call us Evergreen hereafter.

“ And now Sweet Peas be with you, and if he who tries at it Tears me from you, I shall become a Melon-Cauliflower, and wither away. My tongue will always be a Scarlet-Runner in your praise, for I have planted my Hops in you, and now I only live for the time when I may hear from your Tulips that I am your Sweet-William, and not your Weeping Will'o.”

* * *

Miniature Acetylene Generator or Lamp on Trial.

By CHARLES E. RENDLE.

THERE seems to exist doubts in the minds of the many lanternists that one of necessity has to come in touch with, as to whether the acetylene lantern lamps, when placed inside a lantern, are the safest of lamps, and further, whether they are worthy of closer investigation and experiment. To the latter half of the question the answer, tersely, is yes! and to the former, decidedly no! that is, in its present incomplete state, for it is generally admitted by those schooled in the production of acetylene gas, schooled in the many forms of generators, and who have given their time, trouble and experience in putting to the test the merits and demerits of table apparatus in the form of lamps, etc., and who have come to the conclusion that when the lantern lamp is cased around, as it is when in the lantern, certain conditions may transpire requiring immediate attention, which cannot be given it under such circumstances.

In these few lines it is not intended to recapitulate the variety of apparatus in their hundred and one forms that from time to time have been devised for using acetylene gas as a luminant for lantern purposes, so much as to record the result of a little practice with a lantern lamp, and an honest and impartial criticism thereon would be to say that the chief drawback or fault is the impossibility of at once stopping the generation of the gas; it therefore must be burnt off, for if allowed to accumulate disaster might follow.

The readers of the Optical Magic Lantern Journal are agreed—it is presumed—and by professional men undoubtedly so, that the type of apparatus under notice is used or will be used principally, if not solely, by the

novice and amateur,

and it is only reasonable — when speaking in the abstract—to say he knows the least about it, and for that reason alone his interests and safety should receive the first attention of inventor, manufacturer, and all concerned.

It is an unfortunate fact that many forms of apparatus are devised and entered at the Patent Office by some who, whilst possessing much inventive and mechanical ability, have little or no knowledge at all of the properties and chemistry of the gas with which they are dealing. Something is made and often the maker cannot explain its actual working, and it is not until the experimentalist steps in that weak points are strengthened and the faults put right, for it must not be forgotten that it is by the results of experiment—trial and research—that inventive knowledge is perfected.

The above remarks might suggest to some minds that acetylene is a mighty dangerous gas to cope with, but such an inference must not be drawn, nor is it intended. Everyone knows that all gases are dangerous under certain conditions, and the construction of receptacles, such as containers, generating apparatus, and so forth, should be designed with special forethought for the safety of those who may have to use them.

The lantern lamp, as stated above, for the most part is intended for the amateur for home purposes—home purposes because at present, at any rate, its action is not sufficiently constant for public use, accounted for, of course, by its small or no capacity for storage.

In company with two or three others, the writer made some trials with a lamp of this description, but just double the ordinary size, and not inside the lantern, as we had previously decided it were best outside. But does not the very fact of its being outside, or away from the lantern, alter the word lamp to that of generator; for that it really is—the only difference between them being that whilst the burner is fixed direct into the body of the lamp, the gas is conveyed to the burner from the generator by means of a rubber tube. In the above case, then, we call it generator.

The outside measurements of our miniature apparatus is 9 inches by 7 inches by 6 inches. Into the top is fitted a stop-cock, which screws out. When water is poured into the body this is replaced, and securely screwed down on its seat, the bye-pass being left open; its object being to connect it to a small bell gas holder, 9 inches by 6 inches, by a piece of tube. On the right-hand side is fitted in a vertical position a cylindrical chamber, 2¼ inches by 1½ inches. A stop-cock is let into the top, the nozzle of which is something between a stuffing box and a filter, it being plugged with

cotton-wool.

As the gas generates it is led into this chamber, where it rids itself of most of the moisture that accompanies it.

In passing out of the chamber the cotton-wool further drys and filters it, and by the time it reaches the burner it is practically in a dry and purified condition.

One of our number was about to desert the camp in consequence of there being no means of ascertaining the whereabouts of the water or the quantity of gas generated. This was a splendid objection, and led to the success of the whole thing. Running from the top to the middle of the right side, almost over the receiving chamber, we fitted a water gauge, the protecting shield of which is marked index fashion. This gauge is invaluable, in fact we were unanimous in the opinion that no apparatus of this class would be safe to use without it. It tells you the height of the water from start to finish, and by knowing that, the amount of gas beneath the water is also told. It dispenses with measures, and to a very large extent with an overflow vessel, as will be seen below, though this is also advised.

After much deliberation it was decided that the best form of burner to use is a double one, such as that supplied by the Abingdon Acetylene Illuminating Company, of Birmingham, and known as the "Moss" lantern jet. Let it be understood that only one of these burners was in general use, the other acting the part of safety valve, to be turned on only when the water shows above a given point, and turned off when it again falls to its normal height for working. The receptacle for holding the carbon carbide is 6 inches by 3 inches, and with a charge of 6 ozs. to 7 ozs. will last approximately 2 hours.

The trial was successful in so far as the light was uniform, and there had not been more gas generated than what had been burnt; our storage holder proved this by the bell sinking to the level from which it started. The water was freely applied, but required manipulation.

An amusing incident attended our initial trial of the above, which took place in the summer house in the rear of the writer's residence. A neighbour was standing at his garden door watching children playing when my friends and I appeared on the scene, one with a can of water, a second with the generator and well tank, whilst a third had to be content by carrying a tray of all sorts, such as jets, box of matches, carbide, etc., etc. The neighbour, I suppose, seeing the **nature of the procession** jumped at conclusions, and, as the "Yank" says, "made tracks." He picked up his baby boy, who was playing on the grass—it was on one of those very hot evenings last summer that it happened—and stroking the flaxen hair of his girl, said "Come dears, it's safer indoors." They disappeared, and presently the back windows of his house were closed. In the meantime we, so to speak, were getting up steam, and some of the steam—or, in other words, gas—was making its way into the summer air in the direction of my neighbour, who reappeared on the scene smoking his pipe. Advancing to the garden wall, he asked "Where did you buy that 'sanitary dust-bin'"? "Oh, up the road at Johnson's," I returned. "Pretty strong, don't you think"? He took his handkerchief from his pocket, covered his nostrils —"Strong," he said, "it's awful, we can smell it right through the house"; and he turned and went before we could explain that it was the fumes of acetylene he had been sniffing.

NOTES AND QUERIES.—*Continued from page* 32.

County Plumber.—See back numbers. Acetylene will not answer with the blow-through jet mentioned.

W. Smart.—Place a magnifying glass close to condenser, and the defects spoken of should disappear.

A. S.—If hydrogen is first shut off the light will simply go out, leaving the oxygen escaping.

A few Lantern Notes from West Australia.

By P. NEWLAND.

I MAY say I am a great devotee to lantern matters and a constant reader of the MAGIC LANTERN JOURNAL, and am greatly interested in the news given to lanternists by the editor, Mr. J. Hay Taylor. Having received much information, I in turn thought I might be able to supply a little news as to what has lately been going on in this part of the world, for the benefit of readers in the old country.

I HAD lately the pleasure of meeting a son of your respected clergyman, *i.e.*, Rev. Atkins Haslam; he is here with a small lantern conducting services in the interests of children. He informs me that he has had good results throughout the Colony and that he is unattached to any Church.

AT a Wesleyan Home Mission meeting held in an adjoining Colony, South Australia, the good work that had been accomplished with the lantern was pointed out. The operator only had an oil lantern, but he has projected discs as large as 14 feet. The rods of the screen-stand employed were telescopic, and the size of the screen was thus easily regulated according to the size of the building at which any particular exhibition was given.

THE Rev. Edgar, of Melbourne, who is at present on a visit to England, has been using the lantern regularly with great success on Sunday nights once a month. Hundreds who did not previously go to church came, saw, and were blessed.

A SHORT time ago I attended a lantern show entitled "Views of Klondyke," taken from the negatives of a returned prospector. I paid 6d. for admission and was disappointed, as were the other members of the audience. The slides were badly taken and fogged. As a recompense to the public I offered to give a free show soon after.

THE other Sunday night I went to see a lantern show given by the Salvation Army. The collection at the doors was 6d. a head. The building was packed, the light excellent (saturator inside the lantern), and the pictures good. I recognised many slides by well-known English makers. When certain slides were projected on the screen solos were sung, and all joined in the chorus. It was a great success. Shortly after a similar service was given in the morning with the windows darkened with brown paper. The novelty of this drew large crowds.

THE Salvation Army here have lately taken up the cinematograph, and with it they reproduce their processions, rescue work, etc., and with General Booth's talented daughter as lecturer success has been assured; especially as during the lecture the phonograph has been used to reproduce music from their bands, conversations in slumdom, etc. So great has been the success attending this that special officers have taken this department in hand. They call it the triple alliance, *i.e.*, lantern (three-decker), cinematograph, and phonograph, and they purpose fitting out each Colony with an outfit; this will be interesting, as their system will permit of a great interchange of subject slides.

RELATIVE to the foregoing paragraph, one of the leaders informed me that a special limelight department is to be subsidised by the Army. Fascinating services are to be introduced, and it is estimated that the cost will be about £800 a year.

ONE more paragraph and I will conclude. At Melbourne I attended the monthly lantern service (Wesleyan Church) which has been running without a break for six years, and although I arrived ¾ of an hour before the advertised time I found the church, which is capable of holding 2,000, nearly filled and I had a difficulty to get in. Every place was thronged and hundreds had to be turned away. There is, of course, no question as to the good accomplished. How does this strike English readers, and can they give a parallel?

Acetylene Gas and its Generation.

By G. R. BAKER.

A FASCINATING light, a beautiful light, and withal one to conjure with, was the feeling produced on the audience at the Society of Arts when Professor Lewis gave the Cantor lectures, and took for his subject the generation of acetylene gas. Although many of the audience, like myself, had seen his earlier demonstrations and heard him lecture a year or so ago on the same subject, yet everything said and shown was of the greatest interest, and the easy manner of the lecturer and his fluency of speech kept the audience thoroughly attentive. Without attempting to repeat in detail all that was said and shown, a *resumé* of the salient points as they apply to the acetylene gas light as used by lanternists will no doubt be of interest.

An ideal generator is one that will generate the gas at as low a temperature as possible to give maximum of gas. Not two out of 20 of the generators on the market do this. Five cubic feet per pound is what ought to be generated, but generally it is more like 3½ cubic feet. There should also be complete decomposition of the carbide, and for safety low pressure in the generator; the latter should be easy to charge and readily cleaned out. It should also be possible to displace the whole of the air in the generator before generating the acetylene gas. As an idea of the rapidity of heat generation the lecturer stated that one gram of carbide of good commercial quality liberates 406 calories of heat in about one minute, and pure carbide liberates 416 calories per gram.

Many times it has been known for the carbide to be red hot in the generator, and this rapidity of generation to a serious degree has to be avoided. Hence the system of making the generation automatic is the soundest, if such a thing as a really

automatic generator

does exist. Many are good, but perfection has not been realised. The heat produced is shown by the steam given off directly the water drips upon the carbide. It has been proved by testing with a thermo-couple that, on an average, after 25 minutes it reaches a maximum temperature of 400 to 700 centigrade.

The index to the heat is the lime residue, and it tells the tale of the temperature; for if white lime deposit, a temperature of 400 centigrade has been reached; if yellow, 600 to 770 centigrade; and if black, over 780 centigrade.

It will be understood from this that a generator that leaves the residue white is the safest to use, and provided there is no atmospheric air left behind when gas is coming off and a fair percentage of the maximum of gas is generated, it is also the best.

In theory half-pint of water to one pound of carbide is sufficient, but in practice one pint of water is required, to make up for water vapourised as steam and for water clinging to the deposited lime. A safe way is to run water in until the lime residue is flooded and to have plenty of room for the lime.

The drip system of generation is, as the lecturer put it, "not an angel," but still there are many small generators where the flow of water is properly controlled that are most useful and give capital results.

With generators made for the water to rise on the carbide there will be no overheating if the apparatus is well made, but if without a holder for the carbide they are nearly as bad as the drip system of generators. The bell and holder system of generation he regards as the worst of all as to temperature evolved, but it can be minimised by putting the carbide in a series of trays to be acted on in turn.

The dropping of carbide into the water will under certain conditions, by falling on the lime sludge, give a combination of tar and lime as stiff as a dough nut, which is a drawback, but if the sludge falls into a sieve to collect it does not much matter. One pound of carbide gives 8 pints of lime sludge. This system, although having one drawback, has many advantages for it gives gas in greater purity than any other system, all sulphuretted hydrogen being taken out of the gas and nearly all ammonia. Some calcic carbide gives 4 cubic feet per pound of carbide, others 5 cubic feet of gas per pound.

The slowness of rising of the generator is of great importance, for high pressure generates less gas than low pressure. The illuminating value of impure acetylene gas is about half that of pure acetylene gas.

As regards the explosive mixture of air and gas, it is 3 per cent. acetylene and common air, while violent explosions will be found produced by a combination of nine volumes of air to one of acetylene; but the

maximum explosion

is obtained by a mixture of between 11 and 12 per cent. of acetylene and air, while as much as 17 parts of air to one of acetylene have produced an explosion. If enclosed in a vessel, one of each volume of acetylene and air are most violent in explosion. It will be understood from this how necessary it is to blow out any air before applying a light to any acetylene apparatus.

Irregularity of generation is detrimental to successful working, but a simple remedy is sugar which dissolves the lime. If water saturated with sugar be used instead of plain water the generation of gas is regular. This is a fact worth bearing in mind for large as well as small acetylene generators, and the process almost spells automatic in itself. In some form of generators oil has the same effect.

It is satisfactory to know that carbide as manufactured commercially is getting purer each day, and the British made carbide is now almost entirely free from impurities. If phosphuretted hydrogen is present it produces a white haze, but fortunately for those who make use of acetylene for domestic purposes there is an apparatus called a scrubber that answers perfectly, while passing the gas over first slack lime and then over dry lime fixes the sulphuretted hydrogen, the phosphuretted hydrogen, and the ammonia.

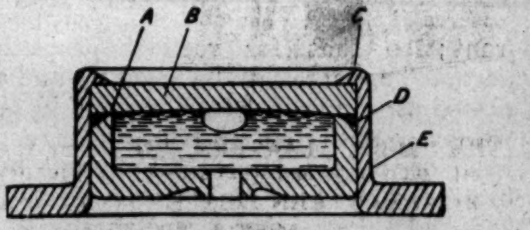
From the foregoing it may seem there are plenty of dangers to be avoided, but once the elements of the gas are understood, and the precautions to be observed are thoroughly understood, the acetylene gas may be used with perfect safety, and a light is then available that is not only practical, but brilliant and satisfactory. Nothing could be more fascinating than to witness the instantaneous generation of gas by dropping calcic carbide into a vessel of water over which a bell receiver has been placed, having attached to it a tube and burner. No doubt all air had been expelled from this before so doing, for when Professor Lewis a few seconds after the immersion of the carbide in the water turned on the tap of jet and the gas, a brilliant light was obtained that burned steadily for some time; in fact, as I said before, it was a light to conjure with, for it savoured more of a magical feat than a matter of fact physical experiment.

* * *

NEW APPARATUS.

SPIRIT LEVEL.

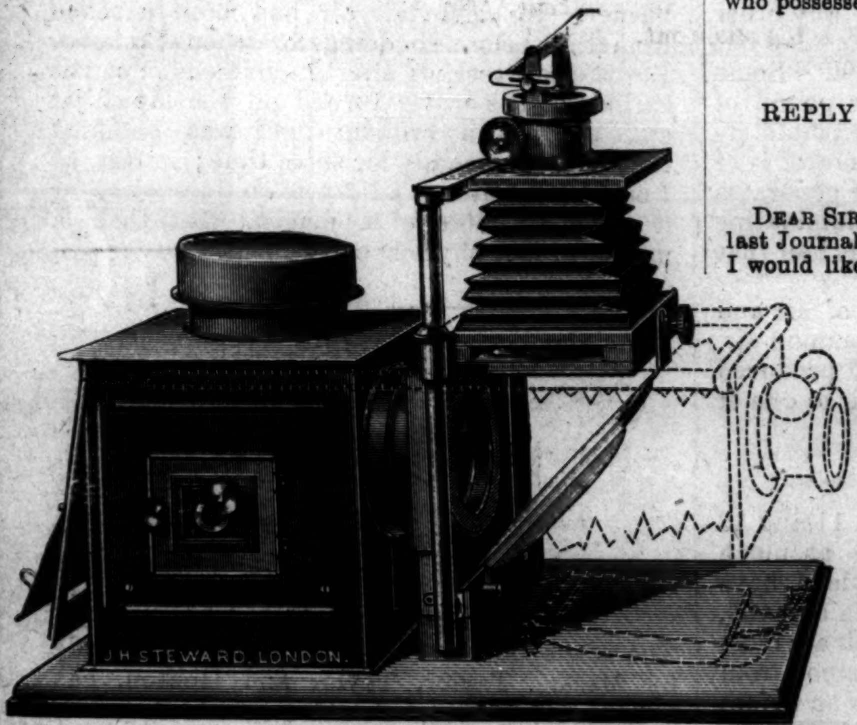
The new spirit level for photographic use, made by Messrs. Taylor, Taylor and Hobson, has been carefully designed. The sectional sketch



here reproduced explains the various parts. The chamber F is stamped from a flat aluminium sheet. When constructing the level the various parts are put together as follows:—Into the outer jacket E the glass B is placed, so that it comes in contact with the rim C. Next an elastic ring D is inserted, and afterwards the aluminium chamber is forced into place, the thin edge A resting against the cover glass B, so that the elastic ring D is under compression; thus preventing all chance of leakage. This level is well finished and retails at 1s.

ENLARGING AND PROJECTING LANTERN.

Mr. J. H. Steward's new model lantern is a well made and useful apparatus. To be useful as an enlarging apparatus it has, of course, to be light tight. It is fitted with two sets of condensers, viz., 5½ inch and 4 inch. The 4 inch or projecting condenser is mounted in two parts, one being attached to the lantern, while the other is secured to a hinged portion of the front; so that for vertical projection this portion has merely to be lifted up and a mirror placed at right angles, as shown in the illustration. With this instrument is supplied a lens of 8 inch equivalent focus, but when desired a lens of any other focus can be supplied. Particular attention seems to have been devoted to good ventilation in the body of this apparatus, and the bellows front is removeable at will should it be intended to project scientific experiments


J H STEWARD, LONDON.

Correspondence.

FANCY SHAPES FOR LANTERN SLIDE MATS.

To Mr. J. Hay Taylor, Editor.

DEAR SIR,—I have lately had a circular sent to me illustrating a new cutter for making lantern slide mats, and on one page the maker gives several examples of the many shapes which his new cutter will produce. The shapes of these mats I consider very much out of place for lantern slides, as by their adoption lantern exhibitions would only be held up to ridicule. Some of the shapes depicted represent the outlines of kites, skittles, new moons, double circles a la stencil plate, cottage shaped loaves of bread, a shape something like a door handle, etc. I have attended numerous lantern exhibitions and have seen pictures in circular mats where square mats would have better suited the subject, and *vice versâ*, but the grotesque shapes advocated in the circular mentioned I sincerely hope will never be exhibited in public as they would be calculated to insult those of the audience who possessed the slightest amount of artistic taste.

Yours truly,
A LOVER OF ART.

REPLY TO OXYGEN, IN JANUARY NOTES AND QUERIES.

To Mr. J. Hay Taylor, Editor.

DEAR SIR,—I observe that Mr. Oxygen has a query in last Journal respecting an automatic oxygen generator. I would like to tell him that I rely implicitly on your description of various apparatus and that you described such apparatus some time ago (I forget which issue), and it was solely on the strength of your opinion that I purchased the apparatus in question in Paris. I use a single lantern, and with it find the light with my blow-through jet everything that could be desired. I use an ordinary mixed jet and a Willway saturator mostly, but when I can get house gas I use a blow-through jet. This is less trouble than three, although not quite such a good light. I may say I have never used the apparatus with a triple lantern, nor do I think it would generate sufficient oxygen for effect work with effect slides. I presume you, Sir, will be having something to say upon the subject, so I need not say more excepting that I am in every way satisfied with the apparatus I have purchased.

Yours sincerely,
W. CALDWELL.

[The correspondent in question did not ask our opinion, he simply asked for the opinion of "any correspondent." Had our opinion been asked we should have given it in last Journal.—ED.]

HISTORY OF PRAYER BOOK.

To Mr. J. Hay Taylor, Editor.

DEAR SIR,—We notice on page 2 of the OPTICAL MAGIC LANTERN JOURNAL for this month, mention is made of a lecture having been given on "History of Prayer Book,' and that your correspondent failed to enlighten you as to the nature of the illustrations. We beg to say we are the publishers of what we think may be said to be a very excellent series of three lectures on the subject, and enclose for your inspection a copy of the lectures and list of illustrations. Yours faithfully,

E. G. WOOD.

1 & 2, Queen Street, Cheapside,
January 2nd, 1899.

———:o:———

PATENT INTELLIGENCE.

The following List, relating to current Patent Applications, is compiled expressly for the "Optical Magic Lantern Journal" by W. P. Thompson & Co., Patent Agents, of 322, High Holborn, London, W.C., to whom all enquiries for further information should be addressed.

No. RECENT PATENT APPLICATIONS.

26195. 12th December, 1898. John Edward Thornton. Improvements in cinematographic apparatus and pictures.

26196. 12th December, 1898. John Edward Thornton. Improvements in cinematographic pictures and the apparatus for photographing and exhibiting same.

26471. 14th December, 1898. Virgilio Crescenzi. Improved arrangement of cinematograph apparatus for displaying pictures on screens.

26609 16th December, 1898. Charles Francis Townsend. A new or improved form of lantern slide or transparency.

26691. 17th December, 1898. Cornelius Lyons. A new and improved acetylene gas lamp.

26722. 17th December, 1898. Charles Raleigh. Improvements in apparatus for taking photographic views in rapid succession and presenting the same in like manner.

26819. 20th December, 1898. Frederick William Barratt. An improvement in acetylene lamps.

26917. 20th December, 1898. Reginald Haddan. Improvements in or relating to binocular telescopes or the like. (Vincent Gastell Rabasa and Vincent Galatayud, Spain) Complete.

27076. 22nd December, 1898. Henry Edmunds. Improvements in winding apparatus for use in cinematographs or for other purposes where films, ribbons, or strips have to be unwound repeatedly in the same direction.

27268. 24th December, 1898. William Morris Mordey and Henry Bevis. Improvements in connection with alternating current arc lamps and lanterns.

27352. 28th December, 1898. Richard John Wilcox Down. Improvements in and relating to magic lantern pictures.

27441. 29th December, 1898. Charles Marty. Improvements in means for reflecting light.

27448. 29th December, 1898. Herbert Pierpoint. Improvements in optical lanterns and other apparatus for displaying advertisements and other similar purposes.

27545. 31st December, 1898. Francis Windham. Acetylene lamps.

27. 2nd January, 1899. John Henry Knight. Stereoscopic views for lantern projection.

90. 3rd January, 1899. Hugh Haswell Shanks and Percy Beresford Wright Kershaw. Improvements in the devices employed for the production of animated pictures.

143. 3rd January, 1899. Frank Prestidge. Improvements in acetylene lamps.

205. 4th January, 1899. Frederick Hugh Smith. Improvements in acetylene lamps.

317. 6th January, 1899. Bernard van der Werff. A new or improved means for extinguishing accidental fires in cinematographs and like instruments.

389. 7th January, 1899. Charles William Hollis. Improvements in apparatus for use in connection with kinematographs and similar instruments.

418. 7th January, 1899. Charles Rayleigh. An improved method of producing photographic pictures for use in the representation of animated or moving objects.

462. 9th January, 1899. Edward John Shaw. Improvements in arc lamps and lanterns.

481. 9th January, 1899. Thomas Swingler, junior, and Robert Hinman. Improvements in or relating to lantern screens.

486. 9th January, 1899. Robert William Paul. Improvements in apparatus for taking and projecting animated and other photographs.

592. 10th January, 1899. Louis Goldschmidt. Improvements in cycle lamps or lanterns.

620. 10th January, 1899. John Tyack Sandell. Improvements in sensitised continuous films for photographic and cinematographic purposes.

650. 11th January, 1899. William Richard Clay. Improvements in gas lanterns.

755. 12th January, 1899. John Rudge. Improvements in reflectors for lamps, and in shades.

775. 12th January, 1899. Charles Raleigh. Improved means applicable for use in the production of animated pictures.

827. 13th January, 1899. John Aykroyd and Barnard Aykroyd. Improvements in combined acetylene generators and lamps.

SPECIFICATIONS PUBLISHED.

Copies of the following specifications may be obtained by remitting 1/- for each specification to W. P. Thompson & Co., Patent Agents, 322, High Holborn, London, W.C.

26842 of 1897. Bond. Means for selectively using acetylene or the like gas with ordinary gas apparatus.

30247 of 1897. Stuart and Barton. Centering motion of arc lamps and limelight jets.

1835 of 1898. Anderton. Method or system by means of which pictures projected upon a screen from an optical or magic lantern or lanterns are seen in relief or with stereoscopic effect.

6515 of 1898. Kamm. Apparatus for photographing and exhibiting cinematographic pictures.

6552 of 1898. Marshall. Oil lamps.

16310 of 1898. Backmann. Folding lantern.

17350 of 1898. Schwarz. Acetylene lamps.

29263 of 1897. Friese-Greene. Means or apparatus for producing and exhibiting animated or changing pictures on advertising and like appliances carried on the person.

30602 of 1897. Ritchie. Acetylene lamps.

1477 of 1898. Kitchen. Acetylene generating lamps.

29694 of 1897. Summers. Device for instantaneously changing slides for magic and other view or picture projecting lanterns.

891 of 1898. Richardson and Price. Generators and lamps for acetylene gas.

8362 of 1898. Pacht. Apparatus for producing and exhibiting animated photographs.

23399 of 1898. Wetter (the Elektrizitäts-Aktiengesellschaft vormals Schuckert and Co). Circular shutter for optical reflectors, projecting lanterns, and analogous appliances.

2044 of 1898. Claypoole. Apparatus for optical projection for advertising and other purposes.

3477 of 1898. Wilson. Projection of pictures of moving objects on a screen with stereoscopic effect.

17805 of 1898. Hughes. Cinematographs and like instruments for the projection of kinetoscopic pictures.

23158 of 1898. Short. Kinetoscopic apparatus.

24735 of 1898. Barron. Apparatus for the exhibition of animated pictures.

———:o:———

Editorial Table.

"PHOTOGRAPHIC MOSAICS." New York: E. L. Wilson. London: Dawbarn and Ward.—This Annual, for 1899, is the thirty-fifth that Mr. E. L. Wilson has brought out, and it maintains the high level to which it attained some time ago. The articles which it contains are of high class, general interest, and are well written. Illustrations are well to the fore in this Annual, there being upwards of 60 fine half-tone pictures and portraits.

CATALOGUE.—The new catalogue issued by the London Stereoscopic Company, Limited, is just to hand. It contains a very full list and particulars of the various apparatus and sundries dealt in by this firm, together with good illustrations. The printing of this large catalogue, was, we learn, done at the printing works of the London Stereoscopic Company, and certainly it leaves nothing to be desired, for both the letterpress and illustrations are well brought up, whilst the general arrangement is excellent.

CATALOGUE.—The catalogue for 1899 published by the Thornton-Pickard Manufacturing Company, Limited, of Altrincham, is very interesting. Not only does it give illustrations of their cameras, shutters, etc., but several splendid half-tone reproductions are given from pictures taken with their own apparatus, these being some of the prize pictures in their recent competition. Amongst other new apparatus this firm has brought out a new time exposure valve for short time exposures, for attachment to their well-known shutters. A small hole is pierced in the air valve which allows the air to escape, and upon the face of the valve a circular revolving disc is screwed to regulate the air escapement. A mark or pointer is engraved at the top of the valve face, and to obtain any of the various exposures marked upon the revolving disc, it is only necessary to turn the disc until the number indicating the required speed is opposite the fixed pointer, then set the shutter for "time" in the ordinary manner by placing the shutter lever opposite the word "time," and holding the ball in the palm of the hand, give it a decided squeeze, and maintain the pressure in precisely the same manner as at present until the exposure is completed.

Notes and Queries.

P. T.—You should, ere this appears, have received the letter we sent you. We sympathise with you, and the best advice we can offer was contained in the letter we sent by post. Let us hear how you are getting on after you have acted on our suggestion, for judging by your abilities, as set forth in your letter, you are just the person who many firms would be only too glad to get into touch with. Remember there is always room at the top.

C. Francis Jenkins.—Our publishers state that they cannot accede to your request, *re* the terms on which your book is sent for review. If, however, it is sent to us we shall have pleasure in reviewing it, but we cannot pay for a copy so sent either directly or indirectly.

John Mason.—The lamp was introduced by Benham and Froud, Limited, of Chandos Street, London.

P.N.—Respecting your query of short and long focus lenses. The long focus lens will give a smaller picture at a longer distance from the screen than can be obtained with a lens of short focus. It may be that you expected further information, but this is the only answer we can give to your query as you have worded it. Should you desire any further information, we shall be pleased to reply to as many queries as you send to us. Consult our table in the Annual and you will readily understand the relative difference.

Eureka.—Your remittance was handed to our publishers, who forwarded the Annual. We note the particulars of your generating system, and also that you state that you have had it in use with success for three months. If you have used it daily with success for this time it may be superfluous for us to offer any opinion. The principle is correct enough in one sense, but you have two floating gasometers, one at the generator and one at the container. In such case it is absolutely necessary that the gasometer weights nicely balance the weight of the bell so as not to put too great a pressure on the bell chamber of the generator, else if the pressure required to raise the former be too great the latter will contain the gas generated and when full the gas will bubble through the water which it contains, unless this latter bell is weighted down a little, and even this cannot be done to any great extent. It is evident that in order to make the apparatus work in a satisfactory manner you have got this balance correct, so we merely mention it as a point to see to should anything go wrong.

E. Clinch (Victoria).—The address of the Mustoscope Company is Windmill Street, Regent Street, London.

A.P.S.—We note your remarks *re* title and that when you employed limelight you inserted on your bills "Limelight exhibition," but now that you employ the acetylene light you wish a title to replace the word "Limelight." Strictly speaking "Acetylene exhibition" would be just as much sense as the former, but of course would be quite unsuitable. How would the words "Lantern views" suit you. You might have a line in smaller type to the effect that "The new and brilliant acetylene light will be used as the illuminant." We cannot think of any two words which will convey the meaning that the exhibition will consist of transparencies projected by the lantern and acetylene gas.

Harold Smith writes:—Who are the makers of the slides known as Sciopticon and where can I get a list of them? *Ans.*—We do not know if the Sciopticon Company still does business under that name, but you might write to Mrs. Smith, 10, Highbury Quadrant, London, N.

Continued on page 27.